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Online Report of Army Aircraft Mishaps

Deployment Trends and Training Mitigations

Of the 19 Class A aviation manned mishaps that have occurred in fiscal year 2012, 14 (74%) have been in support of Operation Enduring Freedom. Deployed units are without question conducting commendable work. Combat is inherently dangerous and unpredictable events occur, yet still Aviation Leaders need to identify hazards and take immediate action to reduce that risk. In this Flightfax, we are taking a closer look at OEF and OIF/OND accident trends to share lessons learned resulting from accident investigations, and provide some thoughts on mitigation strategies for all Aviation units that prepare to conduct contingency operations.

From 2002-2012, 72 of 264 (27%) Army Class A accidents occurred in support of OEF, while 74 of 264 (28%) occurred in support of OIF/OND. These 10 year trends are in sharp contrast to the 14 OEF Class A accidents of 19 Class A Accidents for the Army (74% occurring in OEF) for FY12. In review of the accident case files and considering the three causal categories (Human Error, Materiel, Environment), 13 of the 14 OEF accidents were attributed to human error, and one to materiel failure.

Flightfax has presented articles on Human Factors and Error to assist Aviation leaders in seeing and mitigating human error causes, and will continue to provide articles in future editions. For this edition, we'll focus on the 9 of 13 human error cases where disorientation due to loss of visibility and/or visual cues were contributing factors. In August 2011, PEO Aviation released a report on recommendations on terrain awareness aspects of rotorcraft mishaps in degraded visual environments (DVE). Degraded Visual Environment is defined in the Initial Capabilities Document on Aircraft Survivability (dated 23 February 2011) as reduced visibility of potentially varying degree, wherein situational awareness and aircraft control cannot be maintained as comprehensively as they are in normal visual meteorological conditions and can potentially be lost. The report's first recommendation for mitigation was to place higher emphasis on aircrew training both in-flight and in simulators, focusing on training to standards, piloting in accordance with Aircrew Training Manuals, adhering to policies, and training as the Army fights. Continuation training should include additional training for Instrument Meteorological Conditions / Inadvertent Instrument Meteorological Conditions (IMC/IIMC) and use of the Heads-up Display (HUD).

Clearly, the accident rate since last year, when the report was released, would indicate that this training recommendation is just as important, if not more so, today. While Initial Flight Training, Real-Time SA to the Aircrew, Objective Design and Considerations, and Aircraft Modernization initiatives remain high priority and being diligently worked throughout the Aviation Enterprise, Aircrew Member Training can be an immediate mitigation for Aviation leaders in the field. The 2011 report highlighted that crewmember training and proficiency is essential to reducing accidents. At the onset of the 2003 offensive into Iraq, a noticeable increase of accidents occurred during the mobilization and initial invasion. The aircrews were expected to maneuver the aircraft at or near the maximum gross weight limits with decreasing power margins and often

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in a severely limited visibility environment. The landing sites were in unimproved areas, much like OEF continues to be. The characteristics of these areas are often associated with fine powder or loose sand resulting in complete loss of all visual cues during landing. The obscured and rugged surface condition can easily result in damage or destruction of the aircraft. Factors that may contribute to these accidents may be linked to inadequate aircrew training for flight operations in new environments. Since 2003, accident rates are indicating a downward trend (with a slight increase for FY12), but still above the pre-2003 rate.

The decrease in accident rates in these austere and high-OPTEMPO environments may be attributed in part to increased proficiency of the aircrew members due to multiple rotations into theater and continuous exposure to the environment. This indicates that aircrew member training may be an effective mitigation. Specific training recommendations include:

1) Continuation Flight Training. Recent experience and currency of flight crews affect their ability to safely operate the aircraft in a limited visibility environment. This was a factor in three of the accidents in OEF in FY12. Many garrison and home stations do not have brownout training landing sites. Further, often the aircraft is not flown at or near maximum gross weight during training operations or in simulators. Unfortunately, frequently these training conditions cannot be fully replicated in the actual aircraft until deployment. With this in mind, units should evaluate the use of simulation devices to provide interim training if training cannot be conducted in the aircraft.

2) IMC/IIMC Training. A consistent trend of mishaps attributed to flight into and within IMC and low contrast/low illumination conditions, with many being under night vision devices (9 of 14 accidents in OEF FY12). Flight crews often fail to properly execute the IIMC task correctly and commit to instrument flight; they attempt in vain to stay in visual contact with terrain or other aircraft in the flight. This is a consistent theme with the history of aviation, and as the focus changes to address new threat and missions, basic skills and tasks can easily be overlooked and individual proficiency diminished. Continual emphasis should be placed on established IIMC avoidance and instrument recovery procedures. We've seen this year that special emphasis should be placed on unusual attitude recovery and crew coordination training so that crews are better prepared to detect and subsequently recover from unusual attitude especially when conditions increase the probability and likelihood of occurrence that could lead to a loss of aircraft SA.

3) Day and Night Heads Up Displays (HUD) Training and Standardized Procedures. The use of HUD is not mandatory for flight operations in the cargo and lift communities. This year's accident data strongly indicates that a majority of limited visibility accidents occurred during night operations during use of night vision devices. The mandatory use of HUD should be considered in units if feasible, since HUD provides heading, velocity, drift, altitude and attitude indications for the aircraft. While the HUD in the cargo and lift aircraft has some latency, consider that having some heading, velocity, drift, altitude, and attitude indications is far superior to having none, enabling focus to remain outside the aircraft and now relying solely on cross scans to detect changes when crew focus is riveted on trying to find other aircraft in the formation or searching for terrain features. Getting at the mitigation for reduced visibility of potentially varying degree - wherein situational awareness and aircraft control cannot be maintained as comprehensively as they are in normal visual meteorological conditions and can potentially be lost – is multi-faceted in the aviation enterprise and variable according to aircraft type and mission. Solution effectiveness across the fleet and in Task Forces is difficult, and requires Aviation Enterprise support. However,

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commanders and leaders preparing their crews for unforgiving deployed environments can provide immediate mitigation in a renewed emphasis on training. Training should focus on adherence to established policy and guidance, along with additional training opportunities to evaluate pilot judgment, decision making, piloting techniques, and maneuver execution specifically in these environments.

Until next month, fly safe!
LTC Christopher Prather USACR/SC Aviation Director
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	Total Army			Afghanistan			Iraq		
FY	Class A	Class B	Fatal	Class A	Class B	Fatal	Class A	Class B	Fatal
2002	28	15	19	5	2				
2003	29	18	35	6	1	5	13	7	4
2004	24	18	12	2	2	1	17	6	6
2005	30	20	40	5	1	19	9	6	6
2006	23	17	36	6	0	13	7	6	17
2007	29	14	39	6	0	8	8	6	22
2008	19	16	17	2	2	2	9	7	9
2009	25	24	13	7	10	1	6	5	3
2010	23	13	28	12	5	18	4	1	5
2011	15	15	15	7	9	3		1	
2012	19	12	11	14	7	5	1		
Total	264	182	265	72	39	75	74	45	72

	Total Army Class A by Aircraft Type				Afghanistan Class A by Aircraft Type				Iraq Class A by Aircraft Type			
FY	UH-60	CH-47	AH-64	OH-58D	UH-60	CH-47	AH-64	OH-58D	UH-60	CH-47	AH-64	OH-58D
2002	5	7	9	5	1	2	2					
2003	10	5	10	3	1	4	1		4	1	6	2
2004	5	2	8	9	1		1		3	1	4	9
2005	8	3	14	3		2	2	1	1	1	5	2
2006	10	3	5	1	2	2	2		6		1	
2007	8	3	9	5		2	4		3	1	2	2
2008	5	5		5		1		1	2	3		2
2009	10	1	2	9	1	1	1	3	5			1
2010	8	5	3	4	4	4	1	2	1			2
2011	2	3	3	5	2	2	2	1				
2012	7	4	3	2	5	4	3	1	1			
Total	78	41	66	51	17	24	19	9	26	7	18	20

Note 1. Of the 72 Class A accidents that occurred in Afghanistan FY02 to present, 33 occurred during the day, 37 under NVD, and 2 were night unaided mishaps. 55 were attributed to Human Error, 13 Materiel Failure, with 4 unknown.

Note 2. In FY12, of the 19 Class A aviation manned mishaps that have occurred, 14 (74%) have been in Afghanistan. 13 of the 14 were human error with 1 materiel failure. 9 mishaps were NVD and 5 were day. Operations in unimproved HLZs (8) posed the greatest risk with dust contributing to 3 mishaps, uneven terrain/slope contributed to 4 mishaps, and 1 pinnacle operation mishap. Power management/ excessive maneuvering was related to 3 mishaps; 1 spatial disorientation due to low illum/contrast; 1 drive shaft failure due to improper maintenance; and 1 engine failure have occurred to date.

Helmet Display Unit: “To wear or not to wear? That is the question.”

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Discussion is occasionally generated on the topic of wearing the Helmet Display Unit (HDU) in the AH-64. In light of recent incidents in the field, this discussion has returned to the source, and requires some clarification. There are two different camps on the subject of wearing the HDU. There are some who are proponents and some who are not. The intent of this article is to help clarify whether or not and under what conditions the crewmembers should or must wear the HDU. Since you obviously wear the HDU when flying NVS (night vision system) conditions and are restricted from wearing it underneath your NVG (night vision goggles), this article primarily discusses the use of the HDU during day or night unaided conditions.

Let’s first begin with a little bit of history on the subject. Prior to the fielding of the AH-64D there was no requirement to wear the HDU during day or night unaided flight conditions in the AH-64A. Some pilots chose to wear the HDU, while others elected not to. Based on extensive research and investigation into the causal factors of Apache accidents, the decision to “mandate” the use of the HDU during all flight conditions was made when fielding the AH-64D. However, some leeway was given to the PC so that he/she could decide to not utilize it based on extenuating/un-safe conditions. Those of us who were around for the transition from the AH-64A to the AH-64D probably remember the emotions running high when the requirement appeared in the AH-64D Aircrew Training Manual (ATM). Most AH-64A crewmembers were not fans of having to wear the HDU at all times. I can remember, as a young aviator at the time, asking my instructors, “Why wouldn’t you want to wear this thing? It’s the best thing ever.” Having a few years and flight hours under my belt at this point in my career, I feel I can now approach this topic with the utmost objectivity.

Let’s now talk a bit about what the requirement actually is. The only manual or document that places any requirement on wear of the HDU is TC 1-251. Let’s look at what it says. On page 4-2, Paragraph 4-1c.(5)(g) ”Pilot on the controls (P*) and pilot not on the controls (P) fitted with a bore-sighted helmet display unit (HDU). (The PC may approve instances when wearing an HDU during task performance is not desired.)” This statement is under Common Conditions in Chapter 4. Additionally, in 27 different individual 1000 series tasks, under the Conditions for the task it states, “with the pilot on the controls (P*) fitted with a bore-sighted helmet display unit (HDU).” This equates to 34% of all 1000 series tasks and 77% of all 1000 series PERFORMANCE tasks. Common conditions, like common standards, apply to all tasks unless otherwise specified in the individual task.

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The intent being that the HDU is “fitted” over the eye and in use, not just attached to the helmet. The common standard states that the PC may approve instances when wearing the HDU is not desired. When is that? Various studies in aviation on the use of heads up displays (HUD), have identified pros and cons on their use. The pros are obvious in that the P* does not have to look in the aircraft for flight critical information. He/she is allowed to maintain visual contact with the environment outside of the aircraft while still receiving critical flight information. Some cons are fixation on a particular piece of symbology , attention capture or tunneling, which is the unwanted tendency of the P* to pay too much attention to the presentation in the HDU and missing events in their field of vision outside of the aircraft, and lastly symbology obscuring critical objects in the outside scene. In all of the studies the conclusion was that the pros drastically outweigh the cons and that with training all of the cons could be easily overcome.

With every regulation there is intent behind the writing. Let’s dive into intent. The intent behind allowing the PC the option to approve when not to wear the HDU is to give the crew some flexibility for when the HDU may be causing a hindrance. Some examples of such instances would be: during IMC conditions when the primary references are inside the aircraft via the MPDs and there are no outside references due to inclement weather, when wearing NVGs, and when the CPG is using other displays for targeting. Instances such as your belief that pilot’s have become too dependent on the HDU and have lost the ability to be able to “just fly the aircraft” would not be considered very valid instances. Unfortunately, those who want to skirt the regulation for little reason other than laziness and indiscipline threaten the flexibility that the intent allows us to maintain. We are still losing aircraft and crewmembers to controlled flight into terrain in instances where the systems provided by the aircraft are not being used to their fullest extent, the HDU being one of these systems.

The intent of the common condition and standards in the ATM is to allow crewmembers some flexibility on when to use the systems provided by the aircraft, and when not to use them because they pose a safety hazard. The pilot-in-command remains the ultimate decision maker in that process. This is definitely one of those instances where a little common sense goes a long way! If we continue to have crewmembers making ill advised decisions on such matters, then we become forced to write regulations that do not allow aircrew flexibility. The HDU should be fitted, bore-sighted, utilized, trained and evaluated in all modes of flight and removed only at the PIC discretion for the safety of the crew or the use of another system.

--CW4 Thomas Nowlin, DES Attack Branch, may be contacted at (334) 255-1582, DSN 558.

Mishap Review: NVG Troop Extraction

While conducting a NVG troop extraction under zero illumination conditions, the CH-47D landed hard to an unimproved dusty HLZ causing significant aircraft damage and minor injuries to the crew.

History of flight

The mission was a NVG two-ship extraction of ground forces from an HLZ approximately 38 miles from home base. The two CH-47Ds were assigned an aerial weapons team (AWT) of two AH-64Ds as escort. The crews began their duty day at 1800L. Preflight's were conducted at 1830 with a Go/No-Go brief at 1900L. The mission was determined to be high risk due to low illumination, mission complexity , and crew experience. Risk mitigations included availability of IR illumination rockets and the requirement that the PC be on the controls for the HLZ landing. The mission was briefed to, and approved by, the DCG-O. The weather forecast was for clear conditions and unlimited visibility with winds 290/05 knots. Temperature was +12 C and PA of +5900 feet. The illumination for the flight was 0%.

The flight departed at 2000L with the accident aircraft in the lead position. En route to the pickup point, the aircrews received a new HLZ location from the ground unit when it was determined the original site would not support both aircraft. Upon arrival at the designated HLZ at 2030L, the flight conducted an approach and executed a go-around due to slope conditions. The AMC requested a new HLZ. A site was located by the AWT and the ground unit relocated to the new pickup point. At 2050L, after making an initial pass and determining the site was suitable, the flight attempted to land. Chalk one executed a go-around due to dust. Chalk two landed at the HLZ and departed with their pax. After allowing the dust to settle following chalk two’s departure, chalk one attempted another approach resulting in another go-around. Chalk one then requested the ground unit move to another landing site with less dust. An alternate site was located by the AWT and the ground unit occupied. At 2120, while on approach to the new HLZ, the aircraft landed hard resulting in extensive aircraft damage and minor injuries to four crewmembers.

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Crewmember experience

The PC had more than 1770 hours total flight time, 1289 as a PC, with 233 NG. The PI had 648 hours total time with 81 NG hours. The FE, right side cabin entrance door, had more than 1400 hours, 523 NG, the CE, located at the ramp, had 99 hours, 33 NG and the door gunner, left side cabin door gun position, had 64 hours total with 10 hours NG.

Commentary

The accident board determined that during the approach to the LZ, the PC allowed the rate of descent and ground speed to become excessive for the conditions resulting in the aircraft touching down with an estimated 400-800 fpm rate of descent and 22-26 knots ground speed onto the hard packed, up sloping, and terraced LZ. Additionally, the PI, not on the controls, failed to notify, announce, or otherwise inform the PC of the excessive rate of descent and airspeed condition during the approach. As a result, the aircraft impacted the ground causing damage to the aft landing gear, aft cabin section, and aft pylon section.

RESULTS OF THE ARMY ROTORCRAFT TERRAIN AWARENESS AND WARNING SYSTEM (ARTAWS) WORKING GROUP dated 11 AUGUST 2011 can be found on the USACR/Safety Center Aviation Directorate website:

https://safety.army.mil/LinkClick.aspx?fileticket=BxAJ-QsmMos%3d&tabid=2305

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Class A – C Mishap Tables

Manned Aircraft Class A – C Mishap Table										
	Month	FY 11					FY 12			
		Class A Mishaps	Class B Mishaps	Class C Mishaps	Army Fatalities		Class A Mishaps	Class B Mishaps	Class C Mishaps	Army Fatalities
1st Qtr	October	0	1	4			2	2	9	1
	November	0	2	14			1	0	10	0
	December	2	1	5	4		2	2	6	4
2nd Qtr	January	0	1	8			2	0	11	0
	February	1	1	2			2	1	6	0
	March	2	1	7			1	2	11	0
3rd Qtr	April	2	1	12			2	1	5	4
	May	2	1	5	1		1	0	3	0
	June	3	1	4	2		1	0	2	0
4th Qtr	July	1	3	14	2		4	3	9	1
	August	2	2	10	2		1	1	2	0
	September	0	0	8	0					
	Total for Year	15	15	93	11	Year to Date	19	12	74	10

As of 16 Aug 12

UAS Class A – C Mishap Table									
	FY 11 UAS Mishaps					FY 12 UAS Mishaps			
	Class A Mishaps	Class B Mishaps	Class C Mishaps	Total		Class A Mishaps	Class B Mishaps	Class C Mishaps	Total
MQ-1	2		1	3	W/GE	4	1		5
MQ-5	3		1	4	Hunter	1		2	3
RQ-7	1	14	38	53	Shadow		5	18	23
RQ-11					Raven			1	1
MAV			3	3					
YMQ-18						1			1
SUAV			1	1	SUAV			5	5
Aerostat	6	9		15	Aerostat	1	4		5
Total Year	12	23	44	79	Year to Date	7	10	26	43

As of 16 Aug 12

What commanders can do for accident prevention

Commanders have the responsibility of assuring the safety of all personnel and equipment under their command. This responsibility goes with the territory whether commanders are aviation rated or not. To succeed, commanders must have a complete knowledge of the capabilities of their personnel. Accident files contain many instances of junior grade and warrant officers flying into accidents because someone of higher rank wanted some particular task accomplished under circumstances beyond the capabilities of the aircrews assigned to the mission. Young (and not so young) aviators are known to waive judgment and attempt to exceed their limitations or the limitations of their aircraft when this occurs.

You can provide clearly defined policies and objectives for aircraft accident prevention. By your attitude and example, you can generate the enthusiastic professional approach to flying necessary to accomplish your missions.

You can assure that training does not end for your aviation personnel simply because they have graduated from flying or other schools and have been rated or awarded aviation occupation specialties. Schools can only provide instructions in the fundamentals of skills and sufficient practice to provide a sound basis on which further training and experience can build greater proficiency. This training and experience **must** be provided at unit level.

It is a proven fact that no commander has the time to personally plan, implement, and carry out a full-time aircraft accident prevention program. Commanders must delegate certain authority to staff officers and supervisory personnel within their command. Many accidents are the result of inadequate direction and control in this chain of command. When such accidents occur, they indicate operational weaknesses, which require corrective action in the selection, training, and supervision of those to whom command authority is delegated.

You can continuously review your accident prevention program by assessing the following points:

- Do all personnel know our prevention efforts are enthusiastically supported by me, that all activities receive my personal interest, and that I closely monitor the results?

- Do all members of the command understand that education, continuous training, and close supervision are essential to our prevention efforts?

- Was my aviation safety officer selected on the basis of experience, ability, and education in the field of aviation safety?

- Does he report directly to me? Does he successfully accomplish assigned missions? Are his/her methods effective?

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- Do we have an effective system for exposing operational hazards? Are appropriate actions taken to eliminate hazards? Do all personnel understand and appreciate the advantages of hazard reports?

- Are prevention council meetings regularly scheduled to discuss potential problem areas? Do the appropriate staff officers fully participate?

-Are regularly scheduled safety meetings conducted for crewmembers and maintenance personnel? Do all attendees participate freely in these meetings?

Command attention to the following points will help to prevent accidents, particularly the repeaters, in all units.

- Remember that **any** aviator, under the proper combination of stressful circumstances, may commit errors leading to an aircraft accident. There is no pilot error "type." The safety-minded commander will be alert to changes in the behavior of his/her aviators as they react to the stresses of flying.
- Be firm with aviators whose accidents were caused by pure carelessness, inattention or willful misbehavior. Experience has shown that only positive corrective actions will prevent them from repeating.
- Closely supervise aviators who have just had pilot error accidents.
- Be very selective in appointing aviators with less than 150 to 200 hours pilot time since graduation from flight school as instructor pilots. Exercise extreme care in reinstating IP orders once they have been revoked.
- Carefully guide those pilots who are eager to excel, to succeed, and to accomplish missions at any cost. These can be desirable qualities, but, without proper guidance, this type of eagerness can adversely affect an aviator's judgment. It is also wise to question your own attitude in this regard.
- Supervise aviators with one or more Class C mishaps caused by pilot error as closely as if they had been Class As. The difference is often measured in inches or seconds. The mistakes involve are often identical.
- Carefully evaluate and supervise aviators who have had personal error accidents but will not admit to themselves or others that the fault was their own. Since they do not blame themselves, they do not learn a lesson and will continue in their erroneous ways.
- If an aviator's accident is suspected of involving lack of experience, proficiency, or currency, he will very likely repeat it if faced with the same situation without being given additional guidance, training, and practice.
- Be alert to the opinions of each pilot's ability, as expressed by other pilots. When one aviator says of another, "He is an accident waiting to happen," it is usually correct.
- Examine your own aviation accident prevention program.

Reprinted from Flightfax dated 4 Aug 1982

Selected Aircraft Mishap Briefs

Information based on Preliminary reports of aircraft mishaps reported in June 2012.

<u>Utility helicopters</u>

UH-60 

-A series. Soldier on the ground was fatally injured when struck by a tree branch knocked loose by rotor wash. (Class A)

-A series. Pilot Trainee sustained an onboard injury (twisted knee) while securing the left-side gunner's window with the aircraft operating. (Class C)

-M series. While advancing PCLs both engines went into lockout resulting in over speeds. (Class B)

-M series. Preflight inspection revealed FLIR lens damage. Aircraft had conducted numerous dust landings the night prior. (Class C)

-L series. Rotor drooped departing refuel. Aircraft impacted ground barriers and sustained damage to the nose area. Three minor injuries. (Class B)

-L series. Aircraft sustained damage to the right side lower chin bubble and nose section of the airframe during NVG environmental training. (Class C)

<u>Observation helicopters</u>

OH-58D 

-Aircraft experienced a mast over-torque condition (136%/2 sec) and Ng exceedance (108%) during an APART simulated engine failure. (Class C)

-Crew was conducting VMC approach to an HLZ when they reportedly encountered rotor-wash from an operating CH-47 aircraft. Ng over-speed occurred (108%/1.25 sec). Aircraft landed and shutdown without further incident. (Class C)

OH-58C 

-Aircraft contacted the ground during and evaluation autorotation. Aircraft came to rest on its side. (Class A)

<u>Attack helicopters</u>

AH-64D 

-Crew experienced uncommanded movement of the turret during ground taxi resulting in damage to the gun mount and turret. (Class C)

-Post flight inspection revealed a hole in the stabilator, reportedly as the result of a "zeus" fastener that had separated from the tail rotor panel during flight. (Class C)

<u>Cargo helicopters</u>

CH-47D 

-Aircraft landing gear made contact with rocky terrain during a landing to an unimproved LZ. During emergency shutdown, the front main rotor tips made ground contact as well. Additionally, the aircraft sustained damage to a fuel cell. (Class B)

Mi-17 

-Aircraft rotor drooped during approach to a pinnacle during a resupply mission. Aircraft sustained significant damage after overturning onto its right side and coming to rest inverted. (Class A)

<u>Fixed Wing aircraft</u>

UC35B 

-Aircraft encountered a lightning strike during flight and sustained associated instrument failures. Aircraft was landed without further incident. (Class C)

Selected Aircraft Mishap Briefs cont.

Information based on Preliminary reports of aircraft mishaps reported in June 2012.

Unmanned Aircraft Systems

MQ-1C 

-Crew received an Engine Low oil pressure indication and executed RTB procedures for landing. Engine failed as UA was in descent. UA touched down nose-low and the landing gear collapsed resulting in extensive damage to the airframe and payload sensors. (Class A)

-System was launched with normal indications for departure and climb-out, after which it entered an un-commanded descent and impacted approximately one mile from the runway. (Class A)

-System contacted mountainous terrain during a controlled descent to land. UA reported as destroyed. (Class A)

-Two UAS vehicles made contact while in operation on the active runway of an uncontrolled airfield. One vehicle was moving into position for take-off when it collided with a vehicle that had just touched down. (Class B)

MQ-5B 

-Crew experienced 50-kt winds during climb out and elected to program the system to return for landing. The UA struck a T-wall barrier approximately 200 feet short of the runway during descent and sheared the landing gear. (Class C)

WARNING

"Combat situations do not negate aerodynamic principals nor aircraft limitations"

If you have comments, input, or contributions to Flightfax, feel free to contact the Aviation Directorate, U.S. Army Combat Readiness/Safety Center at com (334) 255-3530; DSN 558

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